Abstract

Logic basic cell, logic basic cell array and logic device

5 A logic basic cell contains a first logic function block and a second logic function block for the logic combination of a first input signal and a second input signal in accordance with a predeterminable first or second logic subfunction, and a first logic transistor coupled to the first logic function block, having a gate terminal, at which a third input signal 10 can be provided, and having a source/drain terminal at which the output signal can be provided. Furthermore, a second logic transistor coupled to the second logic function block is provided, having a gate terminal, at which a complementary 15 signal with respect to the third input signal can be provided, and having a source/drain terminal, which is coupled to the source/drain terminal of the first logic transistor.

52

List of reference symbols

- 100 Logic basic cell
- 101 First data signal path
- 5 101a First n-MOS partial path
 - 101b Second n-MOS partial path
 - 102 Second data signal path
 - 102a First p-MOS partial path
 - 102b Second p-MOS partial path
- 10 103 First data signal input
 - 104 Second data signal input
 - 105 Third data signal input
 - 106 Fourth data signal input
 - 107a Data signal output
- 15 107b Data signal output
 - 108 First n-MOS logic selection transistor
 - 109 Second n-MOS logic selection transistor
 - 110 Third n-MOS logic selection transistor
 - 111 Fourth n-MOS logic selection transistor
- 20 112 First n-MOS data signal transistor
 - 113 Second n-MOS data signal transistor
 - 114 Third n-MOS data signal transistor
 - 115 Fourth n-MOS data signal transistor
 - 116 First p-MOS logic selection transistor
- 25 117 Second p-MOS logic selection transistor
 - 118 Third p-MOS logic selection transistor
 - 119 Fourth p-MOS logic selection transistor
 - 120 First p-MOS data signal transistor
 - 121 Second p-MOS data signal transistor
- 30 122 Third p-MOS data signal transistor
 - 123 Fourth p-MOS data signal transistor
 - 124 First inverter
 - 125 Second inverter
 - 126 Ground potential
- 35 127 Supply potential

53

- 128 Third inverter
- 129 First n-MOS logic transistor
- 130 Second n-MOS logic transistor
- 131 First p-MOS logic transistor
- 5 132 Second p-MOS logic transistor
 - 140 First logic function block
 - 150 Second logic function block
 - 160 First logic function block
 - 170 Second logic function block
- 10 200 Table
 - 300 Logic function block
 - 301 First inverter circuit
 - 302 First n-MOS inverter transistor
 - 303 First p-MOS inverter transistor
- 15 304 Second inverter circuit
 - 305 Second n-MOS inverter transistor
 - 306 Second p-MOS inverter transistor
 - 307 Supply potential
 - 308 Ground potential
- 20 309 Signal path unit
 - 310 First signal path input
 - 311 Second signal path input
 - 312 Third signal path input
 - 313 Fourth signal path input
- 25 314 First p-MOS logic transistor
 - 315 Second p-MOS logic transistor
 - 316 Third p-MOS logic transistor
 - 317 Fourth p-MOS logic transistor
 - 318 Fifth p-MOS logic transistor
- 30 319 Sixth p-MOS logic transistor
 - 320 Seventh p-MOS logic transistor
 - 321 Eighth p-MOS logic transistor
 - 322 Ninth p-MOS logic transistor
 - 323 Tenth p-MOS logic transistor
- 35 324 Eleventh p-MOS logic transistor